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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,065	09/24/2003	David M. Markovitz	UM-08388	5111

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EXAMINER	
COOK, LISA V	

ART UNIT	PAPER NUMBER
1641	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/670,065	MARKOVITZ ET AL.	
	Examiner	Art Unit	
	Lisa V. Cook	1641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 November 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *13-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *13-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *7/17/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group II (claims 13-23) in the reply filed on 7/17/06 is acknowledged. Claims 1-12 have been canceled without prejudice or disclaimer. Currently claims 13-23 are pending and under consideration.

Information Disclosure Statement

2. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the examiner on form PTO-892 or applicant on PTO-1449 has cited the references they have not been considered.

3. The information disclosure statement filed July 17, 2006 has been considered as to the merits before First Action. *Please note:* only page 1 of 8, 2 of 8, 4 of 8, and 8 of 8 were received and considered.

Specification

4. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

I. The first page of the disclosure is not numbered. Please add "1".

II. The use of the trademarks has been noted in this application. (See for example "TRITON" on page 72 and "SEPHAROSE" on page 32). They should be capitalized wherever it appears and be accompanied by the generic terminology. Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner, which might adversely affect their validity as trademarks.

Sequence Non-Compliance

5. This application contains sequence disclosures that are encompassed by the definitions for nucleotide and/or amino acid sequences set forth in 37 CFR 1.821(a)(1) and (a)(2). However, this application fails to comply with the requirements of 37 CFR 1.821 through 1.825 for the reason(s) set forth on the attached Notice To Comply With Requirements For Patent Applications Containing Nucleotide Sequence And/Or Amino Acid Sequence Disclosures. Applicant must comply with the requirements of the sequence rules (37 CFR 1.821 - 1.825) before the application can be examined under 35 U.S.C. §§ 131 and 132. Table I on page 84 of the disclosure recites sequences without including the appropriate sequence identification numbers. Please add the corresponding sequence identification numbers.

Applicant is given THREE MONTHS from the mailing date of this communication within which to comply with the sequence rules, 37 CFR 1.821 - 1.825. Failure to comply with these requirements will result in ABANDONMENT of the application under 37 CFR 1.821(g). Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a). Direct the reply to the undersigned.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 13-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A. Claim 13 is directed to a method for pathogen killing. However, the method steps (a-b) merely recite the measurement of vimentin. The correlative step that links the method to its intended utility is missing. It is suggested that a correlation step is added to the method in order to obviate this rejection. Appropriate correction is required.

B. Claims 20 and 21 are vague and indefinite in reciting antibodies because it is not clear as to what the antibodies will bind. Does Applicant intend to recite anti-vimentin antibodies or some other antibodies? Please clarify the claims.

C. Claim 16 is vague and indefinite because it is not clear how the amount of bioavailable vimentin will be decreased in claim 13 and but simultaneously increased in claim 16. It is suggested that claim 16 read on decreased metabolism for consistency. Appropriate correction is required.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

I. Claims 13-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Steinberg et al. (Journal of Molecular and Cellular Cardiology, Vol.33, No. 6/01, page A104). Steinberg et al. disclose procedures employing Go6983 (PKC inhibitor) to augment cardiomyocyte apoptosis in *Pasteurella multocida* toxin (rPMT) treated cells. Since Go6983 is a compound that inhibits vimentin secretion (for example see specification page 4 line 26-28) the use of the compound in combination with the bacterial pathogen (*Pasteurella multocida* toxin) would inherently decrease the amount of bioavailable secretory vimentin. With respect to the pathogen being killed, it is noted that Go6983 augmented the effects of the toxin. In considering the anticipatory effect of a reference, not only its specific teachings but also the inferences which one skilled in the art would reasonably expect to draw therefrom should be taken in to account. *In re Preda* (CCPA 1968) 401 F2d 825, 159 USPQ 342. Same, that which necessarily flows from what is described. *Ex parte Bylund* (POBA 1981) 217 USPQ 492.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negative by the manner in which the invention was made.

II. Claims 16 and 20-21 are rejected under 35 U.S.C. 103(a) as being obvious over Steinberg et al. (Journal of Molecular and Cellular Cardiology, Vol.33, No. 6/01, page A104) in view of Yatsunami et al. (Biochemical and Biophysical Research Communications, 1991, Vol177 No.3, pages 1165-1170).

Please see Steinberg et al. as set forth above.

Steinberg et al. differ from the instant invention in not specifically teaching compounds that increase vimentin secretion and antibodies (monoclonal and polyclonal) that detect vimentin.

However, Yatsunami et al. teach methods utilizing okadaic acid and dinophysistoxin-1 (35-methylokadaic acid) to hyperstimulate human fibroblasts. Phosphorylation of vimentin in the presence of phosphatase 2A and protein kinase was stimulated in vitro by dinophysistoxin-1 in a dose dependent manner. The hyperstimulated protein (vimentin) reacted with polyclonal and monoclonal ant-vimentin antibodies but not with anti-nucleolin antibodies. See abstract and page 1169.

Yatsunami et al. teach that the effects of the okadaic acid class of tumor promoters, which are reflected in the hyperphosphorylation of vimentin in primary human fibroblasts, should be studied in relation to cell cycle regulation. See page 1169.

It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to evaluate okadaic acid and detect vimentin with antibodies as exemplified by Yatsunam et al. in the method of Steinberg et al. because Yatsunami et al. taught that the effects of the okadaic acid class of tumor promoters, which are reflected in the hyperphosphorylation of vimentin in primary human fibroblasts, should be studied in relation to cell cycle regulation. See page 1169. While, the hyperstimulated protein (vimentin) reacted with polyclonal and monoclonal ant-vimentin antibodies but not with anti-nucleolin antibodies. See abstract and page 1169.

III. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being obvious over Steinberg et al. (Journal of Molecular and Cellular Cardiology, Vol.33, No. 6/01, page A104) in view of Rasmusen et al. (Environmental Health Perspectives, Vol. 84, March 1990, pages 31-34).

Please see Steinberg et al. as set forth above.

Steinberg et al. differ from the instant invention in not specifically teaching compounds that include antisense oligonucleotides or siRNAs.

Rasmusen et al. teach that calmodulin (CaM) levels effect cell proliferation as well as vimentin. Specifically, in CM cells CaM affects cell cycle-dependent levels of mRNAs for tubulin, vimentin, and *c-myc* relative to the levels in BPV cells.

Vimentin and *c-myc* mRNAs were previously shown to respond to mitogenic stimulation. See abstract and page 33 2nd column. In this study, increased and decreased levels of CaM were constructed and expressed in various cell lines. See page 32. The vector allows for the inducible production of CaM anti-sense RNA in a stable cell line. See page 32 2nd column. The was effective in modifying CaM concentrations. See page 33 1st column 2nd paragraph.

It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to evaluate/modify vimentin secretion with CaM expression vectors that produced CaM antisense RNA as taught by Rasmusen et al. in the method of Steinberg et al. because Rasmusen et al. taught that The vector allows for the inducible production of CaM anti-sense RNA in a stable cell line. See page 32 2nd column. The was effective in modifying CaM concentrations. See page 33 1st column 2nd paragraph. While, CaM affects cell cycle-dependent levels of mRNAs for tubulin, vimentin, and *c-myc* relative to the levels in BPV cells. Vimentin and *c-myc* mRNAs were previously shown to respond to mitogenic stimulation. See abstract and page 33 2nd column.

IV. Claims 19, 22 and 23 are rejected under 35 U.S.C. 103(a) as being obvious over Steinberg et al. (Journal of Molecular and Cellular Cardiology, Vol.33, No. 6/01, page A104) in view of Vorgias et al. (Bioscience Reports, 1986, Vol.6, No.1, pages 57-64).

Please see Steinberg et al. as set forth above.

Steinberg et al. differ from the instant invention in not specifically teaching neutral thiol proteinase compounds as vimentin inhibitors.

However, Vorgias et al. teach that vimentin, desmin, glial fibrillary acid proteins and a mixture of cytokeratins were digested with Ca^{2+} activated neutral thiol proteinase. See abstract on page 57 and page 63.

It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to utilize a neutral thiol proteinase compounds as vimentin inhibitors as exemplified by Vorgias et al. in the method of Steinberg et al. because Vorgias et al. taught that vimentin, desmin, glial fibrillary acid proteins and a mixture of cytokeratins were digested with Ca^{2+} activated neutral thiol proteinase. See abstract on page 57 and page 63.

9. For reasons aforementioned, no claims are allowed.

10. Papers related to this application may be submitted to Group 1600 by facsimile transmission. Papers should be faxed to Group 1600 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989).

The Group 1641 – Central Fax number is (571) 273-8300, which is able to receive transmissions 24 hours/day, 7 days/week. In the event Applicant would like to fax an unofficial communication, the Examiner should be contacted for the appropriate Right Fax number.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lisa V. Cook whose telephone number is (571) 272-0816. The examiner can normally be reached on Monday - Friday from 7:00 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le, can be reached on (571) 272-0823.

Any inquiry of a general nature or relating to the status of this application should be directed to Group TC 1600 whose telephone number is (571) 272-1600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see httpr//pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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